



Berliner Physikalisches Kolloquium

im Magnus-Haus, Am Kupfergraben 7, 10117 Berlin

Eine gemeinsame Veranstaltung der Physikalischen Gesellschaft zu Berlin e. V.,
Regionalverband Berlin/Brandenburg der Deutschen Physikalischen Gesellschaft e. V.,
der Brandenburgischen Technischen Universität Cottbus-Senftenberg,
der Freien Universität Berlin, der Humboldt-Universität zu Berlin,
der Technischen Universität Berlin und der Universität Potsdam

– gefördert durch die Wilhelm und Else Heraeus-Stiftung –

Am Donnerstag, dem **03. November 2022**, um **18:30 Uhr**

spricht

Prof. Dr. Thomas Franosch

Institut für Theoretische Physik, Universität Innsbruck

über das Thema

**„Non-equilibrium dynamics of active Brownian particles
(ABP) – a paradigm in soft matter/biological physics“**

Moderation: Ralf Metzler, Universität Potsdam

Various challenges are faced when animalcules such as bacteria, protozoa, algae, or sperms move autonomously in aqueous media at low Reynolds number. These active agents are subject to strong stochastic fluctuations, that compete with the directed motion. Active particles have come into recent focus in statistical physics since they constitute simple but realistic models for systems far from equilibrium. So far most studies consider the lowest-order moments of the displacements only, while more general spatio-temporal information on the stochastic motion is provided in scattering experiments. Here we derive analytically exact expressions for the directly measurable intermediate scattering function for a mesoscopic model of a single, anisotropic active Brownian particle relying on techniques familiar from elementary quantum mechanics. We compare our results to experiments on self-propelled Janus particles both for single-particle tracking as well as dynamic differential microscopy (DDM).

Auch zu lesen im Internet: <http://www.pgzb.tu-berlin.de/>